



# Getting Started User's Guide

Revision 1.3  
October 17, 2007  
Released

# Table of Contents

|   |           |
|---|-----------|
| <b>1. INTRODUCTION .....</b>  | <b>3</b>  |
| 1.1. DOCUMENTATION.....   | 3         |
| <b>2. LICENSE INFORMATION.....</b>                                  | <b>5</b>  |
| 2.1. LIFE SUPPORT DISCLAIMER .....                                  | 5         |
| <b>3. OVERVIEW .....</b>  | <b>6</b>  |
| 3.1. INSTALLATION DIRECTORY STRUCTURE .....                         | 6         |
| 3.2. APPLICATION MEMORY MAPPING .....                               | 6         |
| 3.3. THE STRUCTURE OF APPLICATION CODE.....                         | 6         |
| 3.4. THE BOOT PROCESS .....   | 7         |
| 3.5. COLD FIRE EXCEPTION PROCESSING .....                           | 7         |
| 3.6. THE DEVELOPMENT PROCESS.....                                   | 8         |
| 3.7. THE NETBURNER COMPCODE TOOL.....                               | 8         |
| 3.8. MINIMUM SYSTEM REQUIREMENTS.....                               | 8         |
| 3.8.1. <i>Known System Issues</i> .....                             | 8         |
| 3.9. PROJECT MANAGEMENT WITH NBECLIPSE AND COMMAND LINE TOOLS ..... | 9         |
| <b>4. NETWORK DEVICES: GETTING STARTED .....</b>                    | <b>10</b> |
| 4.1. INTRODUCTION.....  | 10        |
| 4.2. HARDWARE SETUP .....   | 10        |
| 4.3. USING MTTTY .....  | 12        |
| 4.3.1. <i>Downloading an Application to SDRAM</i> .....             | 14        |
| 4.3.2. <i>Downloading an Application to Flash Memory</i> .....      | 15        |
| 4.4. WEB BROWSERS AND PROXY SERVERS .....                           | 16        |
| 4.5. ADDITIONAL RESOURCES .....                                     | 16        |
| 4.5.1. <i>Suggested Reading</i> .....                               | 16        |
| <b>5. SUPPORT POLICY .....</b>                                      | <b>17</b> |

# 1. Introduction

Thank you for purchasing your NetBurner Development Kit. Welcome to the NetBurner family. This guide contains information for both network and non-network devices. The Networking contents of this manual do not apply to any of NetBurner's Non-Network Development Kits (e.g. Mod5213).

## 1.1. Documentation

All documentation is located in the "doc" directory of your tools installation. The default location is c:\nburn\docs. These documents include:

|   |   |
|---|---|
| NBEclipse Getting Started Guide         | Installation instructions and users guide for NBEclipse. This is required reading before using NBEclipse.   |
| Network Programmers Guide               | Programming tutorial for network platforms  |
| NetBurner Runtime Libraries             | Library reference guide for network and non-network platforms.  |
| uC/OS Reference Manual                  | Library reference for uC/OS Real-time operating system.   |
| Mod5213 Programmers Guide               | Programming tutorial for Mod5213 devices  |
| EFFS Programmers Guide                  | Embedded Flash File System programming tutorial   |
| Freescale Processor Manual              | Freescale detailed manuals for ColdFire microprocessors.  |
| GNU Manuals                             | Manuals for GNU C/C++ libraries, compiler and linker. This includes the C/C++ language API functions.       |
| NetBurner PC Tools                      | Reference manual for NetBurner tools that run on the PC, such as IPSetup, Autoupdate and MTTTY.             |
| Platform Manuals for NetBurner Hardware | These are the NetBurner hardware manuals that include schematic information, memory maps and design guides. |

These manuals are intended as an introduction to developing Network/Internet enabled products using NetBurner's Network Development Kits, but it is beyond the scope of any of these manuals to tell you everything you need to know about embedded applications or about the C/C++ programming language. However, we do refer you to a variety of publications that explain the topics that we present in our manuals in more detail.

**The software included in your NetBurner Development Kit is licensed to run only on NetBurner provided hardware. If your application involves manufacturing your own hardware, please contact our [Sales](#) Department for details on a royalty free software license. All license information is also located in C:\Nburn\docs.**

NetBurner is your single source for hardware, software, development kits, tools, technical support, and custom design services. These elements are combined in a unique package that lets you concentrate on developing your product instead of reinventing network protocols and designing hardware. NetBurner solutions also allow you to reduce risk and improve functionality with a complete proven design, including hardware, TCP/IP Stack, RTOS, and all necessary tools. NetBurner is indeed the fastest way to network enable your product.

Whether you want to design your own hardware or are looking for a standard off-the-shelf network solution; NetBurner provides the software, hardware, and tools to get your product to

market in the shortest possible time. NetBurner offers a full line of services from board level designs and hourly consulting to complete turnkey systems.

Please ensure that your NetBurner Network Development Kit is registered by going to <http://support.netburner.com> to set up your account.

**The registration data stored on NetBurner's Server will not be sold, exchanged, or knowingly released to third parties without prior written permission from the individuals affected.**

NetBurner, Inc. makes no representations or warranties with respect to the contents of our manuals and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, NetBurner, Inc. reserves the right to revise our manuals, make changes, and/or discontinue them without notice. Every effort has been made to ensure that all information is correct, but NetBurner, Inc. is not responsible for inadvertent errors.

NetBurner manuals contain links to third-party web sites that are not under the control of NetBurner, and NetBurner is not responsible for the content on any linked site. If you access any third party sites listed in any of our manuals, then you do so at your own risk. NetBurner provides these links only as a convenience, and the inclusion of the link does not imply that NetBurner endorses or accepts any responsibility for the content on those third-party sites.

Under copyright laws, the documentation for any NetBurner User Manuals and/or Getting Started Guides may not be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of NetBurner, Inc. NetBurner and the NetBurner logo are trademarks of NetBurner, Inc.

### **Anti-Piracy Policy**

NetBurner, Inc. vigorously protects its copyrights, trademarks, patents and other intellectual property rights. In the United States and many other countries, copyright law provides for severe civil and criminal penalties for the unauthorized reproduction or distribution of copyrighted material. Copyrighted material includes, but is not limited to computer programs and accompanying sounds, images and text. Under U.S. law, infringement may result in civil damages of up to \$150,000, and/or criminal penalties of up to five years imprisonment, and/or a \$250,000 fine. In addition, NetBurner, Inc. may seek to recover its attorneys' fees.

NetBurner, Inc.  
5405 Morehouse Drive Suite 200  
San Diego, CA 92121 USA  
1-858-558-0293 (Telephone)  
1-858-558-8549 (Fax)

[sales@netburner.com](mailto:sales@netburner.com) (NetBurner Sales Department)  
[support.netburner.com](mailto:support.netburner.com) (NetBurner Technical Support)  
<http://www.netburner.com> (NetBurner Website)

Copyright © 2007 NetBurner Inc., All rights reserved.

## 2. License Information

The following three options require the purchase of a NetBurner License:

- NetBurner software running on your hardware
- NetBurner hardware reference design
- NetBurner hardware reference design and software

For additional information, please contact our [Sales](#) Department for License pricing information.

All embedded software and source code provided in this Network development kit is subject to one of four possible licenses:

The NetBurner Tools License (the most restrictive)  
The NetBurner Embedded Software License  
The GNU Public License (GPL)  
The Newlib License (the least restrictive).

The GNU Development Executables provided in the **C:\Nburn\GCC-M68k** directory branch are subject to the GPL – The GNU Public License (**C:\Nburn\docs\GNU**).

The Runtime Libraries and include files provided in the **C:\Nburn\GCC-M68k** directory branch are subject to the **Newlib License** (**C:\Nburn\docs\GNU**).

The Compcode application provided in the **C:\Nburn\pctools\compcode** directory is subject to the GPL – The GNU Public License (**C:\Nburn\docs\GNU**).

All other programs are subject to the **NetBurner Tools License** (**C:\Nburn\docs\LicenseText**).

All other provided source code and libraries are subject to the **NetBurner Embedded Software License** (**C:\Nburn\docs\LicenseText**).

### 2.1. Life Support Disclaimer

NetBurner's products both hardware and software (including tools) are not authorized for use as critical components in life support devices or systems, without the express written approval of NetBurner, Inc. prior to use. As used herein:

Life support devices or systems are devices or systems that **(a)** are intended for surgical implant into the body or **(b)** support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.

A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## 3. Overview

### 3.1. Installation Directory Structure

This section does not apply to any of NetBurner's Non-Network Development Kits (e.g. Mod5213).

The NetBurner installation creates a number of directories located under the root C:\Nburn directory. These directories are listed below along with a brief description:

| Directory            | Description   |
|----------------------|---|
| \docs                | Documentation root directory  |
| \examples            | NetBurner example applications  |
| \gcc-m68k            | GNU C/C++ compiler executables and libraries  |
| \lib                 | NetBurner system libraries and linker scripts   |
| \make                | The make file fragments that implement the NetBurner make environment   |
| \pcbin               | Executable files for the NetBurner Windows tools  |
| \pctools             | Source code for the NetBurner Windows tools   |
| \include             | NetBurner network API header files  |
| \include_nn          | NetBurner non-network API header files  |
| \system              | NetBurner network system libraries source code  |
| \system_nn           | NetBurner non-network system libraries source code  |
| \(platform)\system   | Source code for the specific platform (hardware) system Libraries   |
| \(platform)\include  | Source code for the specific platform (hardware) NetBurner API Libraries  |
| \(platform)\original | Compiled copies of the factory applications. These can be downloaded to your NetBurner device to restore the factory application. |

### 3.2. Application Memory Mapping

Many embedded systems map memory starting at address zero. NetBurner deliberately does not map address zero so that NULL pointers can be detected. Any attempt to dereference a NULL pointer will cause a bus fault exception. Please refer to your hardware platform documentation for detailed memory maps.

### 3.3. The Structure of Application Code

All NetBurner applications are designed to operate from SDRAM. After you have built the application, you can load it into SDRAM (DL command) and execute it; or you can load it into FLASH (FLA command) and have the Boot Monitor load it into SDRAM on reset. This allows you to run exactly the same linked image whether you are debugging or running your final application, and minimizes the unpleasant surprises that can occur when firmware is developed with an emulator and moved to FLASH. The recommended development method is to download to flash memory.

### 3.4. The Boot Process

Upon reset, the Coldfire processor loads the Stack Pointer and Reset Vector from parameters supplied in FLASH memory. The Reset Vector is contained in the NetBurner Boot Monitor code. The Boot Monitor program then will:

- Initialize MBAR (Module Base Address Register)
- Initialize RAMBAR (RAM Base Address Register)
- Initialize CS0 (Chip Select /CS0)
- Initialize other Chip Selects
- Initialize SDRAM
- Initialize VBR (Vector Base Register)
- Initialize the primary Serial Port
- Fill in the Vector Table with the Boot Monitor exception handlers

The acronyms specified above are explained in the [Freescale](#) User's Manual for your particular hardware platform (in **C:\Nburn\docs\FreescaleManuals**).

The application always runs from SDRAM. It is stored in FLASH memory as a compressed image. The Boot Monitor moves the application from FLASH to SDRAM when all of the following three conditions are true:

1. The Boot Monitor Parameters are configured to boot the application.
2. An 'A' (i.e. an upper case A) has not been received from the primary serial port during the boot wait interval. (An 'A' would cause the system to remain in the boot monitor program.)
3. The Monitor uncompresses the application and the application checksum calculation is correct.

Important: If **any** of the above three conditions are **not** met, the application is **not** loaded, and the system will remain in the Boot Monitor program. If this occurs, and you are monitoring the primary serial port, you will see the NetBurner prompt (i.e. nb>)

### 3.5. Coldfire Exception Processing

When the Boot Monitor starts, it fills all of the exception vectors with a pointer to the Boot Monitor exception handler. Your application may overwrite any of these entries. The NetBurner system libraries only overwrite vectors for Timer, Serial, and Ethernet interrupt handling. The Boot Monitor exception handler looks at the exception action from the Boot Monitor Parameters record and chooses one of the following three actions (which can be configured in the monitor setup screen):

- Prints the exception data to the primary serial port and halts
- Prints the exception data to the primary serial port and restarts
- Silently restarts

## 3.6. The Development Process

The NetBurner environment is setup to run normal C and C++ programs. It includes all of the standard C Library functions. As the programmer, you can choose to do as much or as little system initialization as desired. If your code includes a function named 'main', you have complete control. If you would like the NetBurner Library to initialize the timer and serial port, then use as your starting function:

```
void UserMain( void * pd )
```

With this method, the main function is provided by the **main.c** file (in **C:\Nburn\system** or **C:\Nburn\system\_nn** for the **Mod5213** platform). **Note:** All of the examples in your **C:\Nburn\examples** directory begin with the `UserMain( )` function. This is the method most commonly used by developers.

## 3.7. The NetBurner Compcode Tool

The NetBurner CompCode tool takes an S-Record targeted at the beginning of SDRAM and compresses the image using the zlib library. It then prepends a header that defines the size, starting point and checksum. The image is output as an S-record whose base address starts at 0xFFC08000 (the beginning of application memory space). A typical compression ratio is 2:1. The source code for the NetBurner compcode tool is in **C:\Nburn\pctools\compcode**.

## 3.8. Minimum System Requirements

- An Intel Pentium P4 processor or equivalent
- Windows 2000, Windows XP or Vista
- NBEclipse must be installed using a Windows User account with administrative permissions.
- NBEclipse must be run with the same user account used during the installation
- NBEclipse requires Java Version 1.5 or higher running on your host computer
- 512 MB of random-access memory (RAM)
- 600 MB of available hard drive space

### 3.8.1. Known System Issues

If you are using `stdin`, `stdout`, or `stderr` from multiple tasks, you must leave the files set to unbuffered. This is done as part of the system startup code, so you should not need to change it. This problem also exists for any `FILE *` you create using `fdopen`. You can set the file to unbuffered with the following function:

```
setvbuf( thefile, NULL, _IONBF, 0 );
```



### 3.9. Project Management with NBEclipse and Command Line Tools

You can choose to develop with the NBEclipse IDE or Command Line Tools. NBEclipse can manage your project automatically. If you prefer a command line environment, or desire to use your own IDE you can invoke the compiler with your own makefile. Each example program in c:\nburn\examples includes a makefile to build the project.

**The following only applies if you use the Command Line Tools:**

The NetBurner tools provide a set of "make" file fragments that simplify compiling and linking your custom projects. In order to use this makefile system you must do one of the following:

Use the NetBurner Application Wizard application to set up your project

Edit the list of C, C++, and S source files to be included in your project's "makefile"

A simple (minimal) NetBurner "make" file shown below.

```
# This is a minimal make file. Anything that starts with '#'
# is a comment. To generate the dependencies automatically
# run "make depend".
# To clean up the directory run "make clean".
# Run make depend whenever you:
# - Add files to the project.
# - Change what files are included in a source file
# Run "make clean" whenever you change this makefile.
# Setup the project root name
# This will build NAME.x and save it as $(NBROOT)/bin/NAME.x
NAME      = simhtml
CXXSRCS   := main.cpp  htmldata.cpp
# Uncomment and modify these lines if you have C or S
# files.
# CSRCS   := foo.c
# ASRCS    := foo.s
CREATEDTARGS := htmldata.cpp
# Include the file that does all of the automagic work!
include $(NBROOT)/make/main.mak
htmldata.cpp : $(wildcard html/*.*)
comphtml html -ohtmldata.cpp
```

The makefile fragments in the C:\Nburn\make directory accomplish this makefile automation.

- Applications use: root.mk, main.mk, and last.mk
- Libraries use: root.mk, libmain.mk, and last.mk

After the make system "makes" an application image, it uses the NetBurner CompCode tool to make a compressed application image that can be loaded in FLASH memory. Running "make load" will compile the project and download it to the NetBurner device.

## 4. Network Devices: Getting Started

### 4.1. Introduction

This section contains information on how to get started with your kit (such as system configuration, how to download files, and interfacing with HTML). The focus of this section is to allow someone to begin their application code development without having to configure compilers, building hardware, and integrating network and operating system software. Building a network device covers many engineering disciplines. This manual and associated documentation is intended to be a reference guide for developers rather than a tutorial on a specific topic.

### 4.2. Hardware Setup

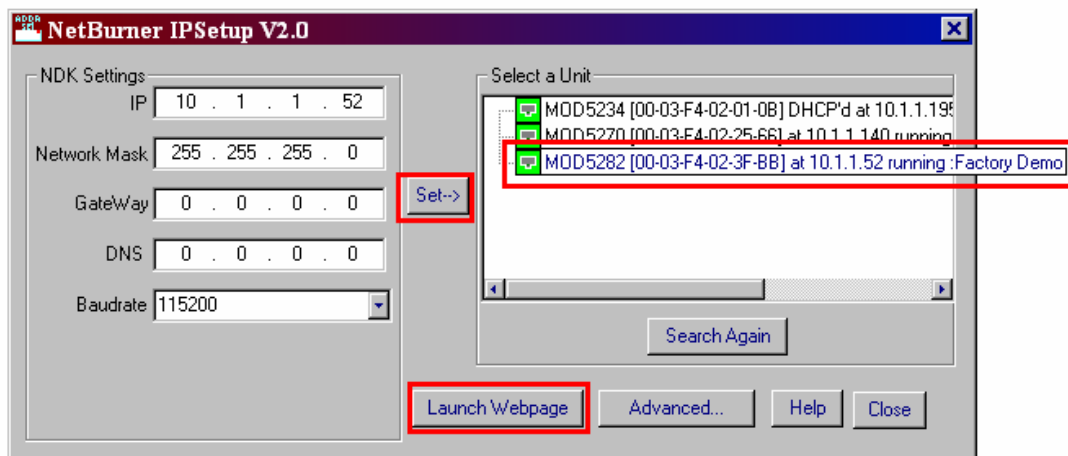
This section assumes you have setup TCP/IP on your host computer and have a working Ethernet card with TCP/IP configured as a protocol. You will also need to have a Static IP Address to assign to the NetBurner board, and you need to know your IP Network Mask (e.g. 255.255.255.0), or you can use DHCP (if you have a DHCP Server). If you are not part of a larger LAN, and do not know how to get an IP address, please read the section "I'm Really New to Networking and I'm Confused About Getting an IP Address" below. **Note:** This section is **also** covered in your (hard copy) **Quick Start Guide**.

1. Get a Static IP Address and configure a Network Mask, or use DHCP (factory default).  
**Warning:** If you are part of an existing network, are not using DHCP, stop reading now, and go get an IP Address and Network Mask from your Network Administrator. IP Addresses are used to route packets from place to place on an Intranet/Internet. If you are not part of an established network, and your ethernet segment is isolated, you can choose just about any IP Address you desire. The "powers that be" have actually set aside some addresses for isolated networks. They are documented in RFC1918. The reserved ranges are:

| IP Address                     | Class |
|--------------------------------|-------|
| 10.0.0.0 to 10.255.255.255     | A     |
| 172.16.0.0 to 172.31.255.255   | B     |
| 192.168.0.0 to 192.168.255.255 | C     |

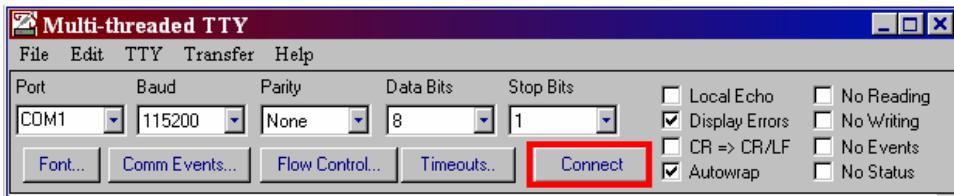
2. Install the NetBurner Development Tools on your host computer.
3. Connect the power adapter (that came with your kit) to your NetBurner hardware. Insert the P5 male connector on the power adapter cord to the P5 female connector on your NetBurner hardware.
4. Plug the power adapter into a working electrical outlet.
5. If you are part of an existing network or are using a hub: Use the blue RJ-45 standard ethernet cable (that was included in your kit) to connect the NetBurner board to an unused network jack or hub port. Important: You cannot use the blue patch cable to connect directly to a network card in a computer.

6. If you do not have a hub and want to connect directly to your computer: Use the red RJ-45 crossover Ethernet cable (that was included in your kit) to connect the NetBurner board directly to your host computer. Important: You cannot use the red patch cable to connect to a network hub or existing network jack.
7. Execute the **IPSetup** program (from Windows: Start → Programs → Netburner NNDK → IP Setup tool). The IPSetup GUI will appear as shown below. **Note:** If you used the default installation settings, this program is located in **C:\Nburn\pctools\ipsetup**.
8. The IPSetup program will automatically locate all NetBurner devices on the subnet. **Note:** If more than one device appears, select your device by matching the MAC address displayed in IPSetup with the MAC address label on your NetBurner hardware as shown below.
9. If you are using a Static IP Address, enter your IP Address and Network Mask in the corresponding text boxes in the NDK Settings pane. For example, if you are on an isolated network, the IP Address could be 10.1.1.52 and the Mask could be 255.255.255.0 (as shown below). See the "How Do I Select an IP Address" section in this manual for more information. Remember to **click the Set→ button** in the center of the IPSetup GUI to submit (and **save**) your modifications.
10. If you are using DHCP, Verify that the IP Address and mask have been set; they will be visible in the IPSetup Select a Unit pane (as shown below).
11. You can view the NetBurner factory (web page) program immediately by clicking the Launch Webpage button in the IPSetup GUI (as shown below). You can also open up your web browser and enter the IP Address to view the web page

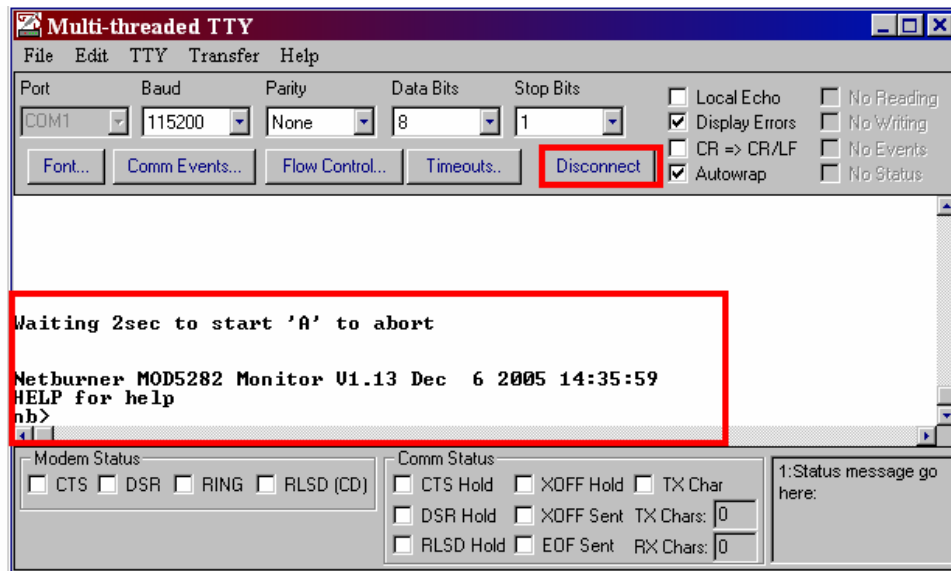


### 4.3. Using MTTTY

- NetBurner provides a simple serial communications program called MTTTY. The following examples will assume that you are using this program. There is nothing extraordinary about MTTTY, and you are free to use whatever communication program you desire. This section is also covered in your (hard copy) Quick Start Guide.
- Set up your NetBurner hardware and install the NetBurner SW in your host computer as described in the (previous) section - "Hardware Setup".
- Connect the supplied Serial cable from the Serial port on your NetBurner hardware to your host computer's serial port (UART 0).
- If you are using any of the NetBurner modules with the Mod-Dev-100 Carrier board, the serial port is the inner serial port (J7) on your Carrier board.
- If you are using any of the NetBurner modules with the NetBurner Mod-Dev-50 Carrier board, the serial port is the inner serial port (J4) on your Carrier board.
- If you are using the Mod5270LC Kit with the Mod-Dev-70 Carrier board, the serial port is the inner serial port (UART0) on your Carrier board.
- If you are using the PK70, the serial port is the right (DB9) port.
- If you are using the Mod5213 with the Mod-Dev-40 Carrier board, the serial port is the inner serial port (UART0) on your Carrier board. Important: Please read your (hard copy) Quick Start Guide to enable Flow Control.
- If you are using the CB34EX (with the supplied NULL Modem cable), the serial port is the right (DB9) port (Port 1). Note: You must use the supplied NULL Modem cable to connect your CB34EX to your host computer. **Warning:** You cannot use a Standard Serial cable.
- If you are using the SB72-EX (with the supplied NULL Modem cable), the serial port is the left serial port (Port 0). Note: You must use the supplied NULL Modem cable to connect your SB72EX to your host computer. **Warning:** You cannot use a Standard Serial cable.
- If you are using either the SB72 or SB70 boards with the SB72/SB70 Adapter/Evaluation board, the serial port is the inner serial port (J2) on the Adapter/Evaluation board.
- If you are using the CFV2-66 board, use the single on-board serial port.
- Start the MTTTY program (from Windows: Start → Programs → Netburner NNDK → Mttty Serial Terminal). Select the Port that you connected the Serial (or NULL modem) cable to on your host computer (usually COM1). Set the Baud rate to 115,200, the Parity to None, the Data Bits to 8, the Stop Bits to 1 (as shown on the next page), and press the Connect button. Note: After you click the Connect button, the button name will change to Disconnect.



- Press the Reset button on your NetBurner device (or cycle power on a PK70, SB72, SB72IO, SB70, SB72-EX, or CB34EX). You will see a message "Waiting Xsec to start 'A' to abort". Note: You may have to scroll the screen to view this message.
- Before the time expires, type an A (i.e. an uppercase A), and the NetBurner boot monitor prompt (i.e. nb>) will appear as shown below.

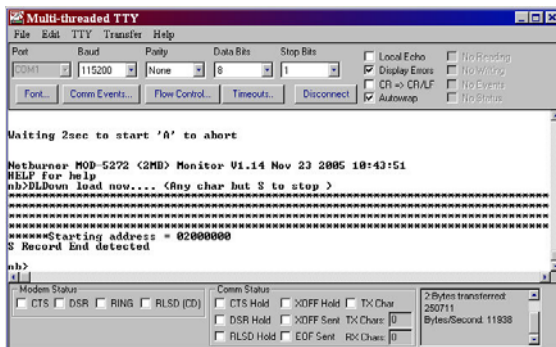


- The next step depends on whether you choose to download to SDRAM or FLASH. Important: Programs downloaded to SDRAM will be lost when the power to your board is turned off. Programs downloaded to FLASH memory will overwrite the current program in your board.

### 4.3.1. Downloading an Application to SDRAM

This section does not apply to the NetBurner Non-Networked Development Kits (e.g. Mod5213). While you will normally download to flash, there may be some occasions in which you want to download a program into SDRAM.

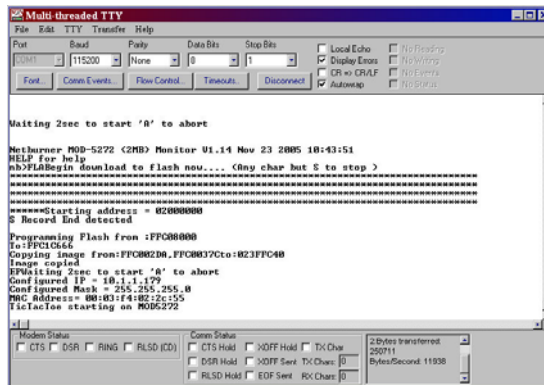
- At the nb> prompt in the MTTTY window type the command DL (DL stands for download), then press the Enter key
- Next, send the .s19 file to your board. This is done by either selecting the Send option from the Transfer menu, or by pressing the F5 key on your keyboard. A Send File window will appear. Navigate to the directory where your .s19 file is located, select it from the file list, and click the Open button.
- As the download progresses, "\*\*\*\*\*" characters will appear in the MTTTY window, and the progress bar on the lower left hand side of the MTTTY window will move towards the right as shown below.



- When the download has finished (you will be returned to the nb> prompt) , type the command GO at the nb> prompt, and press the Enter key - your application will start.

### 4.3.2. Downloading an Application to Flash Memory

- At the nb> prompt in the MTTTY window type the command FLA (FLA stands for FLASH Application), then press the Enter key
- Next, send the \_APP.s19 file to the board. This is done by either selecting the Send option from the Transfer menu, or by pressing the F5 key on your keyboard. A Send File window will appear. Navigate to the directory where your \_APP.s19 file is located, select it from the file list, and click the Open button. Note: All NetBurner example \_APP.s19 files are located by default in C:\Nburn\<HardwarePlatform>\original.
- As the download progresses, "\*\*\*\*\*" characters will appear in the MTTTY, and the progress bar on the lower left hand side of the window will move towards the right.
- The Boot Monitor will automatically reprogram the application area of the flash and restart your NetBurner device (as shown below). Important: If your program does not automatically restart, automatic loading may be turned off. If this is the case, type the command BOOT and press the Enter key - your application will start.



## 4.4. Web Browsers and Proxy Servers

If you are working on a corporate LAN that uses a proxy server for Internet web browsing, you will need to exclude the IP Address of your NetBurner hardware in your web browser's proxy server settings/preferences. Otherwise, an attempt to connect to a web page on the LAN will fail because the proxy server will attempt to route the request outside the LAN. For most web browsers, this can be accomplished in the advanced settings for the proxy server configuration. Just set the Network Mask for both to 255.255.255.0.

## 4.5. Additional Resources

Creating a network device covers many disciplines. We have tried to provide examples that you can use as starting points for the specific features that you wish to implement. In addition to this manual, we provide many example programs (In C:\Nburn\examples) that you are free to use.

**Warning:** Some of the NetBurner example applications do not have Networking/AutoUpdate enabled. Therefore, when you load one of these example programs without AutoUpdate, you must load a new program into your NetBurner board via the Serial Port.

For general information on the ColdFire processor, try the ColdFire discussion group. You can also join the NetBurner Group on Yahoo to exchange ideas, troubleshooting tips, etc. with other NetBurner developers.

In addition, you can download free copies of the latest ColdFire Microprocessor Family Reference Manuals and the ColdFire User Manuals directly from [Freescale](#).

### 4.5.1. Suggested Reading

- uC/OS-II by Jean J. Labrosse
- TCP/IP Illustrated, Volume 1 by Richard Stevens



## 5. Support Policy

We offer three levels of support

1. Ninety days of free E-Mail support and Software upgrades with the purchase of a Development Kit
2. One year of E-Mail support and upgrades when you purchase an Annual Support Agreement. Note: If you purchase an Annual Support Agreement at the time you purchase your Development Kit, you will receive one year plus three months for the of support and upgrades, plus three bonus months at no charge, for a total of one year and six months of Free E-Mail support.
3. Telephone support is available on an hourly consulting basis. Please contact our [Sales](#) Department for more information.

Important: In order to submit technical support requests, you must register your Development Kit at <http://support.netburner.com>. Registration is quick and easy. The registration data stored on NetBurner's Server will not be sold, exchanged, or knowingly released to third parties without prior written permission from the individuals affected.

We require that all of our developers participate in the support process. Therefore, if your question is technical in nature, a senior engineer, not a junior support person, will (most likely) provide your answer. If we have any questions about your support request, we may call you and ask for more information. We will reply to all support requests in less than 24 hours. Major holidays (e.g. Thanksgiving and Christmas) are excluded. If you are having problems, remember to include the following with your [support](#) request:

- The NetBurner hardware platform that you are using
- The software revision of the NetBurner software that you are using (found in the release\_tag file in C:\Nburn)
- A detailed description of your problem and the steps necessary to reproduce your problem
- A telephone number and suggested hours so that we can contact you (if necessary)

The NetBurner Annual Support/Maintenance Agreement is the best way for you to stay current with the rapidly changing technologies that affect your products. All annual maintenance plan subscribers receive Software upgrades and enhancements free of charge as soon as they are released (via E-Mail notification). This means that you will be able to uniformly manage upgrades across your organization, avoiding piecemeal implementation and technology inconsistency.

The NetBurner Annual Support/Maintenance Agreement provides "technology insurance," ensuring your employees have the latest technology to maximize their productivity. Yet it lets you manage your upgrade strategy and technology versions inexpensively, easily, and with low administrative overhead. The NetBurner Annual Support/Maintenance Agreement helps ensure the maximum return on your hardware and software investment. Please contact our [Sales](#) Department for more information.

NetBurner, Inc. reserves the right at any time to change its support options and policies without notice.